

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

FungoMan, LLC

Manufacturing Extension Partnership of Louisiana

FungoMan, LLC Improves Product with Assistance from MEPOL

Client Profile:

FungoMan produces automated athletic practice machines, specifically focusing on the sport of baseball. The privately-owned company began operations in 2002 and sells their product throughout the U.S. FungoMan employs 8 people at its facility in Shreveport, Louisiana.

Situation:

In an effort to improve the quality of an existing product, FungoMan's Senior Project Engineer, Brad Tilton, identified an area for improvement in the throwing wheels on their baseball practice machine. Tilton gathered samples of different materials in his research for potential modifications, and through testing held at the FungoMan facility, selected a plastic material to be used to make the prototypes of the revised product. At this point, Tilton needed to have the sample material identified so as to reproduce the plastic as closely as possible to the original piece. He contacted the Manufacturing Extension Partnership of Louisiana (MEPOL), a NIST MEP network affiliate, for assistance.

Solution:

MEPOL's Polymer Lab Project Director, Rebecca Scherff, proposed identifying the unknown sample using the Fourier Transform Infrared Spectroscopy Method (FTIR). During FTIR analysis, the unknown sample is subjected to a modulated infrared beam. The sample's absorbance of the infrared rays is translated into an IR absorption spectra consisting of peaks and valleys. "FTIR analysis produces a FTIR spectral pattern that is analyzed and matched with known spectrums of identified materials in the FTIR library. Each polymer has its own unique IR-spectra; as unique as a fingerprint," said Scherff. Through the FTIR testing, Scherff was able to determine the plastic sample as polyurethane. The sample information was presented to FungoMan quickly and accurately, confirming to their supplier that it was a polyurethane-based sample. Scherff said, "I chose to perform the FTIR testing method because it has become the classical method for analysis of plastics due to the affordability and user-friendly instruments. Compared to other methods, the client saved approximately 65 percent on testing costs with this method." With the FTIR testing, the client experiences an 80 percent faster turnaround time for results. "Getting the results of this unknown sample to the client quickly allows them to begin making prototypes faster, thereby making them more competitive," said Scherff.

Results:

- * Saved testing costs of 65 percent.
- * Achieved a more competitive and profitable position.

Testimonial:

"MEPOL was the only testing lab we contacted. I Googled 'plastic materials analysis Louisiana' and MEPOL was at the top of the list. Rebecca was professional and informative. Her quick response

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allowed our component supplier to produce prototype wheels that are now in testing."
Brad Tilton, Senior Project Engineer